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=> s azithromycin and degradation
          3075 AZITHROMYCIN
        161001 DEGRADATION
L1           8 AZITHROMYCIN AND DEGRADATION

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L1 ANSWER 1 OF 8 CA COPYRIGHT 2006 ACS on STN
AN 145:195974 CA
AB A simple, accurate, and rapid spectrophotometric method for the estimation of azithromycin was developed by the acidic hydrolysis of the drug with sulfuric acid and monitoring the absorbance at 482 nm. All variables affecting the reaction conditions such as sulfuric acid concentration, heating time, temperature, and dilution solvents were carefully studied. Anal. parameters such as stability, selectivity, accuracy, and precision were established for the method and evaluated statistically to assess the application of the method. The method was applied successfully for the assay of azithromycin dihydrate in pure and pharmaceutical dosage forms as tablets, capsules, and suspensions. The method was found to have the advantages for simplicity, stability, sensitivity, reproducibility, and accuracy for using as an alternate to the existing non-spectrophotometric methods for the routine anal. of the drug in pharmaceutical formulations and also in pharmaceutical investigations involving azithromycin dihydrate.

L1 ANSWER 2 OF 8 CA COPYRIGHT 2006 ACS on STN
AN 145:108928 CA
AB A simple classification scheme is suggested to characterize the biodegrdn. of micropollutants such as pharmaceuticals, musk fragrances and estrogens during wastewater treatment. The scheme should be a basis for the discussion about potential removal efficiencies. Hence, the biol. degradation of 25 pharmaceuticals, hormones and fragrances was studied in batch expts. at typical concentration levels using activated sewage sludge originating from nutrient-eliminating municipal wastewater treatment plants. Since pseudo 1st-order degradation kinetics was observed for all compds. down to ng/L levels, the removal rates can be predicted for various reactor configurations.

Therefore dilution of wastewater (e.g. by extraneous water) is expected to reduce the degree of biol. removal. Wastewater segregation and treatment at the source are therefore to be favored for elimination of persistent micropollutants over centralized end-of-pipe treatment. For reactor configurations typical for nutrient removal in municipal wastewater, the derived formula for predicting removal allows the identification of three groups of micropollutants according to their degradation constant kbiol: compds.
with kbiol <0.1 L/g SS-day are not removed to a significant extent (<20%), compds. with kbiol >10 L/g SS-day transformed by >90% and in-between moderate removal is expected. Based on the degradation of a heterogeneous group of 35 compds. (including literature data), state of the art biol. treatment schemes for municipal wastewater are not efficient in degrading pharmaceuticals: only 4 out of 35 compds. are degraded by >90% while 17 compds. are removed by <50%.

L1 ANSWER 3 OF 8 CA COPYRIGHT 2006 ACS on STN
AN 144:80531 CA
AB Time-dependent inhibition of CYP3A4 often results in clin. significant drug-drug interactions. In the current study, 37 in vivo cases of irreversible inhibition were collated, focusing on macrolides (erythromycin, clarithromycin, and azithromycin) and diltiazem as inhibitors. The interactions included 17 different CYP3A substrates showing up to a 7-fold increase in AUC (13.5% of studies were in the range of potent inhibition). A systematic anal. of the impact of CYP3A4 degradation half-life (mean t1/2deg = 3 days, ranging from 1 to 6 days) on the prediction of the extent of interaction for compds. with a differential contribution from CYP3A4 to the overall elimination (defined by fmCYP3A4) was performed. Although the prediction accuracy was very sensitive to the CYP3A4 degradation rate for substrates mainly eliminated by this enzyme (fmCYP3A4 ≥ 0.9), minimal effects are observed when CYP3A4 contributes less than 50% to the overall elimination in cases when the parallel elimination pathway is not subject to inhibition. Use of the mean CYP3A4 t1/2deg (3 days), average unbound systemic plasma concentration of the inhibitor, and
the corresponding fmCYP3A4 resulted in 89% of studies predicted within 2-fold of the in vivo value. The impact of the interaction in the gut wall was assessed by assuming maximal intestinal inhibition of CYP3A4. Although a reduced number of false-neg. predictions was observed, there was an increased number of over-predictions, and generally, a loss of prediction accuracy was observed The impact of the possible interplay between CYP3A4 and efflux transporters on the intestinal interaction requires further evaluation.

L1 ANSWER 4 OF 8 CA COPYRIGHT 2006 ACS on STN
AN 143:339648 CA
AB The present invention is directed to methods and compns. for improving pulmonary surfactant catabolism. More specifically, lysosomal phospholipase A2 (LPLA2) is discovered to degrade phospholipids accumulated in pulmonary surfactant of alveolar macrophages as a result of treatment of cationic amphiphilic drugs (CADs) such as amiodarone and D-t-PDMP. CADs induce phospholipidosis by inhibiting LPLA2. Thus, lysosomal phospholipase A2 is effective in methods for the diagnosis and treatment of disorders of phospholipid catabolism such as pulmonary alveolar proteinosis. The invention also provides transgenic mice having a phenotype lacking phospholipase activity and an accumulation of phospholipids in one or more tissues selected from the group consisting of alveolar macrophages, peritoneal macrophages, and spleen, as compared to non-transgenic mice of the same lineage. The lpla2-/- mice are generated by systemic deletion of the lpla2 gene exon 5, which encodes the lipase motif essential for LPLA2 activity.

L1 ANSWER 5 OF 8 CA COPYRIGHT 2006 ACS on STN
AN 141:337708 CA

AB Multifunctional polymers are disclosed having a smart segment and a biodegradable segment. Advantageously, the biodegradable segment includes a hydrophilic segment and a hydrophobic segment. Embodiments include combining the multifunctional polymeric material with a biol. active substance in an aqueous loading environment and administering the composition as a drug delivery vehicle to a human subject. For example, a copolymer hydrogel was prepared from N-isopropylacrylamide and diacrylate poly(L-lactic acid) and dextran allyl isocyanate and was loaded with nerve growth factor (NGF) for releasing NGF thermoresponsively.

L1 ANSWER 6 OF 8 CA COPYRIGHT 2006 ACS on STN
AN 141:314570 CA
AB The invention is directed to degradation products of azithromycin, methods for the preparation and identification of the degradation products which may be produced during storage and/or synthesis of azithromycin.

L1 ANSWER 7 OF 8 CA COPYRIGHT 2006 ACS on STN
AN 136:156464 CA
AB Polymers (i.e. polyesters, polyamides, and polythioesters or a mixture thereof) which degrade hydrolytically into biol. active compds. are provided. Methods of producing these polymers, intermediates useful for preparing these polymers, and methods of using these polymers to deliver biol. active compds. to a host are also provided. The biol. active compound is a non-steroidal anti-inflammatory drug, antibacterial, antifungal, anticancer, antithrombotic, immunosuppressant, or analgesic. For example, morphine was copolymd. with a diacid chloride to provide a polyester.

L1 ANSWER 8 OF 8 CA COPYRIGHT 2006 ACS on STN
AN 124:324388 CA
AB Continuous degradation of molasses slops remaining after Baker's yeast production mixed with azithromycin production wastewater is described. Expts. were conducted in laboratory reactors where wastewater treatment was simulated under the same conditions as in an Anamet reactor in which Baker's yeast production wastewater is treated. The anaerobic reactor was 22 dm3; the aerobic reactor was 3 dm3. Wastewater from azithromycin production were toxic to anaerobic activated sludge microorganisms, preventing biogas production, and also inhibited aerobic activated sludge microorganism growth. Therefore, this wastewater was pretreated to decrease its toxicity to aerobic and anaerobic activated sludge microorganisms. Pretreatment was performed by alkaline electrooxidn. under the following conditions: sample volume = 150 cm3; pH decreased from 12.5 to 7.2 during the 3,5 h reaction; Pt electrode c.d. = 6.35 A/dm2; and initial sample temperature = 25°, increased to 57°, and ended at 51°. Before pretreatment, average COD of azithromycin production wastewater was 70,000 mg/dm3; aerobic toxicity was ϕ = 10-4; and anaerobic toxicity ϕ = 10-6. After pretreatment, biol. treatment was possible: COD = 9,245 mg/dm3; aerobic toxicity was >ϕ = 0.62; and anaerobic toxicity was >ϕ = 0.5. In addition, molasses slop/pretreated azithromycin production wastewater mixture was not toxic to anaerobic nor aerobic microorganisms, and could therefore be treated biol.

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L1 8 S AZITHROMYCIN AND DEGRADATION